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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,371	04/19/2004	David Renick Brown	MEMS-0131-D1	9737
40575	7590	09/08/2004	EXAMINER	
KCO LAW P.L.L.C. P. O. BOX 220472 CHANTILLY, VA 20153-0472			AMARI, ALESSANDRO V	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/826,371

Applicant(s)

BROWN, DAVID RENICK

Examiner

Alessandro V. Amari

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/10/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Case et al "Multifacet holographic optical elements for wave front transformation".

In regard to claims 1, 7, 11 and 16, Case et al discloses (see Figures 2, 3, 7) an off-axis beam shaper or splitter for producing an output beam of a desired order with a desired energy distribution comprising an optical substrate and a diffractive surface (hologram #1) formed on the optical substrate to perform both a beam shaping function on an input beam and to spatially separate the output beam of the desired order from all other diffracted beams of different orders as described in pages 2670-2673.

Regarding claims 2 and 12, Case et al discloses that the beam shaping function includes changing an energy distribution of the input beam from Gaussian to uniform as shown in Figure 2 and as described in pages 2670-2673.

Regarding claims 3 and 13, Case et al discloses (see Figure 2) a beam corrector (hologram #2) located a distance from the beam shaper to correct a phase of the output beam as described in pages 2670-2673.

Regarding claims 4 and 14, Case et al discloses that the beam corrector changes a direction of the output beam as shown in Figure 2.

Regarding claims 5 and 15, Case et al discloses that the diffractive surface deflects the output beam at an acute angle to an optical axis of the input beam as shown in Figures 2 and 7.

Regarding claim 6, Case et al discloses that the desired order is 1st order as described in pages 2670-2673.

Regarding claims 8 and 17, Case et al discloses that the plurality of output beams fall along a first line, and the first line of output beams is translated a sufficient distance from the optical axis of the input beam in a direction substantially perpendicular to the first line as shown in Figures 2 and 7.

Regarding claim 9, Case et al discloses that none of the plurality of output beams overlaps a 0th order beam from the splitter as described in pages 2670-2673.

Regarding claims 10 and 18, Case et al discloses that the plurality of output beams define a two dimensional array as shown in Figure 3 and the array of output beams are translated a sufficient distance from the optical axis of the input beam in a direction perpendicular to the optical axis as shown in Figures 2, 3 and 7.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Aharoni et al US 5,422,746 teaches an off-axis beam shaper as shown in Figure 3. Shimomura et al US 6,064,057 teaches an off-axis beam splitter comprising an optical substrate and a diffractive surface formed on the optical substrate to split an input beam into a plurality of identical output beams and to translate the

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plurality of output beams away from an optical axis of the input beam as shown in Figures 7B, 8, 10 and 11.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (571) 272-2306. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ava *ava*
03 September 2004


MARK A. ROBINSON
PRIMARY EXAMINER